

## NEW CALIFORNIA THYSANOPTERA

BY DUDLEY MOULTON

This paper adds seven new species of Thysanoptera to the fauna of California. All of these except one are in the genus *Frankliniella* Karny. The common forms of this genus known here at the present time are: *occidentalis* Pergande (syn. *helianthi* Moulton), *moultoni* Hood (new name for *californica* Moulton), *minuta* Moulton and *gossypii* Morgan (found in Southern California and Arizona). The species *tritici* Fitch, so far as I know, has not been found in this state. The addition of six new species of *Frankliniella* therefore more than doubles the number which have been recognized here up to the present time.

*Frankliniella insignis*, Moulton, n. sp.

Female holotype: uniformly light yellowish including legs and wings, antenna mostly yellow, with II a little darker, distal half of IV slightly clouded, outer half of VI and VII and VIII light brown. Spines light brownish yellow. Crescents of ocelli light yellow, concolorous with head or only a little darker.

Total body length 1.1 mm.; head length .08 mm., width .14 mm. Segments of antenna: III, 40 (20); IV, 36; V, 30; VI, 43; VII, 7; VIII, 9 microns. Length of spines: interocellar 40, post-ocular 16, on anterior angles of prothorax 56, on anterior margin 40, on posterior angles, outer 50, inner 66, on ninth abdominal segment, median 80, next adjoining 93, median on tenth segment 86. microns.

Pedicle of third antennal segment with distinct swelling in outer half; spines on fore wings: fore vein 17, hind vein 14; comb on eighth abdominal segment wanting.

Type material: female holotype taken on citrus foliage, in Southern California, May 10, 1929 (R. S. Woglum). In author's collection (No. 3841).

This species may be separated from *citri* Moulton by its shorter third antennal segment and the clear yellowish basal half of sixth antennal segment. It may be separated from *tritici* by these same characters and by the shorter terminal spines.

*Frankliniella citri*, Moulton, n. sp.

Female holotype: Color; uniformly light yellowish including legs and wings, pterothorax slightly orange yellow; antennal segments: I, whitish yellow, II, brownish orange yellow, all of III,

basal half of IV and all of V clear yellow, outer half of IV and VI to VIII brown. Spines yellowish, only major spines brownish. Ocellar crescents light brownish orange.

Total body length 1.25 mm.; head length .102 mm.; width .147 mm. Segments of antenna: length (width) III, 50 (20); IV, 43; V, 33; VI, 43; VII, 10; VIII, 10. Length of spines: interocellar 46, postocular 20, on anterior angles of prothorax 60, on anterior margin 46, on posterior angles, outer 53, inner 73, on ninth abdominal segment, median, 86, next adjoining 93, median on tenth 93 microns.

Pedicle of third antennal segment with distinct swelling in outer half; spines on fore wing: fore vein, 19, hind vein, 16. Comb on eighth abdominal segment wanting in the middle.

Type material: female holotype taken on citrus foliage, October 9, 1926 (E. A. McGregor). In author's collection. No. 1155.

Type locality: Calexico, California.

This species may be separated from *tritici* Fitch by its clearer color, the longer antero-marginal and shorter terminal spines, 93 microns as compared with 116-126 in *tritici*.

#### *Frankliniella yuccæ*, Moulton, n. sp.

Female holotype: head and thorax orange yellow, head lighter, pterothorax darker, abdomen brownish yellow, tenth segment darkest. First antennal segment grayish yellow, II and VI to VIII dark brown, III yellow in basal half shading to grayish brown in outer half, IV yellowish at base shading to dark brown in outer three-fourths, V yellowish in basal half, dark brown in outer half. Legs mostly yellow, femora shaded with brown on outer margins. Wings slightly tinted with yellow, veins yellow. Spines brown.

Total body length 1.32 mm.; head length .12 mm., width .17 mm. Segments of antenna: length (width) II, 43; III, 70 (22); IV, 66; V, 46; VI, 56; VII, 10; VIII, 16; total 340 microns. Length of spines: interocellar 63, postocular 36-40, on anterior angles, of prothorax 80, on anterior margin 83-86, on posterior angles, outer 96, inner 96, on ninth abdominal segment median 133, next adjoining 150, median on tenth 153 microns.

Pedicle of third antennal segment with only a slight swelling in outer half. Spines on fore wings: fore vein 22-23, hind vein 17-20. Comb on eighth abdominal segment complete but weak in the center, with each seta arising from an enlarged saw-tooth-like base.

Male allotype colored as in female but lighter.

Type material: female holotype, male allotype, one male and

three female paratypes, taken in flowers of yucca in Southern California, May 15, 1926. (M. No. 701). Types in author's collection.

This species has a great resemblance to *occidentalis* Pergande but may be separated by the longer antennal segments and the longer spines.

**Frankliniella obscura, Moulton, n. sp.**

Female holotype: Color blackish brown including antenna and legs, fore wings uniformly deep brown, spines blackish brown.

Total body length 1.06 mm. Segments of antenna: length (width); III, 50 (20); IV, 43; V, 36; VI, 46; VII, 10; VIII, 14. Length of spines: interocellar 40, postocular 30, on anterior angles of prothorax 66, on anterior margin 76, on posterior angles outer 76, median on ninth abdominal segment 106, next adjoining 126, median on tenth 106 microns.

Pedice of third antennal segment with slight swelling. Spines on wings: fore vein 18, hind vein 14-15. Comb on eighth abdominal segment complete; each seta placed on a broadened saw-tooth-like base.

Male allotype smaller, head and legs brownish yellow, fore wings light brown. Clear, small oval areas on sternites two to six.

Type material: female holotype, male allotype and three female and two male paratypes taken in grass sweepings and on alfalfa. Types in author's collection. (M. No. 4861). Type locality, Ione, Amador County, Cal.

This species may be separated from *simplex* Priesner by its more uniformly deep brown color, shorter third antennal segment and lesser number of spines on hind vein of fore wing.

**Frankliniella venusta, Moulton, n. sp.**

Female holotype: Head yellowish brown, lighter in anterior half, prothorax dark brown, pterothorax yellowish orange brown, darkened at the sides, abdomen blackish brown. Antenna: I, brown; II, dark brown; III to V, brownish yellow shading gradually to brown; VI to VIII, deep brown. Legs: fore tibiae, tips of middle tibiae and all tarsi rather clear yellow, the fore tibiae shaded slightly at the sides, all femora dark brown, middle and hind tibiae lighter at both ends. Wings clear, veins yellow.

Total body length 1.1 mm.; head length .10 mm., width .143 mm. Segments of antennae: length (width) III, 43 (16); IV, 36; V, 33; VI, 43; VII, 7; VIII, 14 microns. Length of spines: interocellar 50, postocular 26, on anterior angles of prothorax 63,

on anterior margin 53, on posterior angles, outer 70, inner 76, median on ninth abdominal segment 106, next adjoining 116, median on tenth 106 microns.

Pedicle of third antennal segment with a slight swelling in outer half. Spines on wings: fore vein 17, hind vein 12. Comb on eighth abdominal segment complete but very sparse.

Type material: female holotype taken on California sage, July 31, 1926 at Markleeville, Alpine Co., California. (M. No. 961). In author's collection.

This species has the general appearance of *fusca* Hinds but is easily separated by the longer postocular and anterior marginal spines of the prothorax.

#### *Frankliniella conspicua*, Moulton, n. sp.

Female holotype: Head and thorax brownish yellow, head lighter, pterothorax shaded with orange, abdomen brown, darker at tip. Antennal segments mostly brown, II darkest, III shaded with yellow in basal half. Legs brownish yellow, tibiae mostly yellow, shaded at the sides. Wings uniformly light brownish, veins yellow. Spines brown.

Total body length 1.4 mm. Head length .117 mm., width .16 mm. Segments of antenna: length (width) II, 36; III, 50 (22); IV, 43; V, 36; VI, 50; VII, 10; VIII, 18 microns. Length of spines; interocular 70, postocular 46, on anterior angles of prothorax 100, on anterior margin 90, on posterior angles outer 93, inner 100, median on ninth abdominal segment 126, next adjoining 146, median on tenth 153 microns.

Pedicle of third antennal segment simple. Spines on fore wings: fore vein 17, hind vein 13. Comb on eighth abdominal segment complete but weak.

Type material, female holotype taken on *Orthocarpus lacerus*, May 27, 1928. (H. Parker) (M. No. 2816). Type in author's collection.

Type locality, Lakeport, California.

This species has a close resemblance to *moultoni* Hood but is separated by the longer spines on head and prothorax and the lesser number of spines on hind vein of fore wing.

#### CHIROTHRIPS SECALIS Moulton

Female holotype: Dark brown including antennae and legs except third antennal segment which is lighter and all tarsi and distal portions of fore tibiae which are yellow; wing brown.



Total body length 1.48 mm.; head length .10 mm., width .133 mm.; prothorax length .21 mm., width in front .143 mm., behind .233 mm.; antennal segments: length (width) I, 16 (26); II, 33 (26); III, 36 (23); IV, 40 (23); V, 33 (20); VI, 43 (20); VII, 10; VIII, 13; total length 230 microns. Spines on posterior angles of prothorax: inner 46, outer 56 microns; at top of abdomen 126 microns.

Type material: Female holotype and ten female paratypes taken on rye grass July 9, 1929 by G. R. Struble. Types in author's collection. (Moulton No. 3836).

Type locality: Willow Ranch, Modoc County, California.

This species is distinctive from other North American members of this genus in that the second antennal segment is simple and not drawn out into an angular process on the distal outer margin and in this respect it resembles *hamatus* Trybom found in Europe. The head is wider than long and not noticeably produced in front, the cheeks are slightly diverging posteriorly, with two pairs of minute setæ on forehead, the ocellar pair placed opposite anterior ocellus; the sense cone is simple on the third antennal segment and forked on the fourth. Side of thorax straight and diverging posteriorly, each posterior angle with two well developed spines and with three setæ on either side along posterior margin. Fore vein of fore wing with four basal spines and two near tip, hind vein with five near middle of wing and one at tip. End of abdomen drawn out and pointed much as in *similis* Bagn.

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#### NOTE ON PTOCHIOMERA CÆCA VAN D.

Mr. H. G. Barber has very kindly called my attention to the fact that the name *Ptiochiomera cæca* given by me to a species from the Marquesas Islands (Bishop Mus., Bull. 98, p. 187, 1932) is preoccupied by *Plociomera cæca* Distant from Guatemala. I do not find that a correction of this duplication has been published so I will now suggest the name *Ptiochiomera mumfordi* Van D., n. n., for this species.—E. P. Van Duzee.